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09/214,519	01/07/1999	TOSHIKI HASHIZUME	101850	8609

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EXAMINER

LEROUX, ETIENNE PIERRE

ART UNIT	PAPER NUMBER
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2171

DATE MAILED: 03/18/2004

43

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/214,519

Applicant(s)

HASHIZUME ET AL.

Examiner

Etienne P LeRoux

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 42.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat No 5,508,834 issued to Yamada et al (hereafter Yamada '834).

Claim 1:

Yamada '834 discloses:

- an optical modulation device [Fig 2, 201]
- a transparent plate [Fig 2, 207] bonded to and in contact with, substantially the entire at least one surface of the optical modulation device

Claim 4:

Yamada '834 discloses:

- a light source [Fig 2, 208];
- an optical modulation device [Fig 2, 201] that modulates a light flux emitted from the light source according to image information

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- a projection unit [Fig 2, 209] that magnifies and projects the light flux modulated by said transparent plate [Fig 2, 206] formed on a light emitting surface of said optical modulation device, the transparent plate formed on and in contact with, substantially the entire light emitting surface of said optical modulation device [Fig 2]

Claims 1 and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pat No 5,734,454 issued to Omae et al (hereafter Omae '454).

Claim 1:

Omae '454 discloses:

- an optical modulation device [Fig 1, 13 and Fig 22, 152 and col 8, lines 31-38]
- a transparent plate [Fig 22, 153] bonded to and in contact with, substantially the entire at least one surface of the optical modulation device,

Claim 4:

Omae '454 discloses:

- a light source [Fig 22, 171];
- an optical modulation device [Fig 1, 13 and Fig 22, 152 and col 8, lines 31-38] that modulates a light flux emitted from the light source according to image information
- a projection unit [Fig 22, 174] that magnifies and projects the light flux modulated by said optical modulation device,
- transparent plate [Fig 22, 153] formed on a light emitting surface of said optical modulation device, the transparent plate formed on and in contact with, substantially the entire light emitting surface of said optical modulation device [Fig 22]

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omae '454 in view of Yamada '834.

Claim 2:

Omae '454 discloses the elements of claim 1 as noted above.

Omae '454 fails to disclose a polarizer bonded to said transparent plate.

Yamada '834 discloses a polarizer bonded to said transparent plate [Fig 5, 8]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Omae '454 to include a polarizer bonded to said transparent plate as taught by Yamada '834.

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The ordinarily skilled artisan would have been motivated to modify Omae '454 per the above for the purpose of providing polarized light energy to the modulator.¹

Claim 6:

Omae '454 discloses the elements of claim 4 as noted above.

Omae '454 fails to disclose said transparent plate having a thickness and said projection unit having a focal depth, and the thickness of said transparent plate being set larger than the focal depth of said projection unit.

Yamada '834 discloses said transparent plate having a thickness and said projection unit having a focal depth, and the thickness of said transparent plate being set larger than the focal depth of said projection unit [col 4, lines 15-25].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Omae '454 to include said transparent plate having a thickness and said projection unit having a focal depth, and the thickness of said transparent plate being set larger than the focal depth of said projection unit as taught by Yamada '834.

The ordinarily skilled artisan would have been motivated to modify Omae '454 per the above for the purpose of preventing dust or fluff causing an adverse effect on the image quality [col 4, lines 15-24].

Claim 7:

Omae '454 discloses the elements of claim 4 as noted above.

Omae '454 fails to disclose a polarizer having an optical axis interposed between said transparent plate and said projection unit, said transparent plate being made of a drawing resin

¹ Refer Pub No US 2003/0147137 issued to Li, paragraphs 3 and 4

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and having an optical axis, and the optical axis of said transparent plate substantially aligns with the optical axis of said polarizer.

Yamada '834 discloses a polarizer having an optical axis interposed between said transparent plate and said projection unit, said transparent plate being made of a drawing resin and having an optical axis, and the optical axis of said transparent plate substantially aligns with the optical axis of said polarizer [col 6, line 60 and Fig 7, 9 and Fig 7, 7 and Fig 2, 209].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yamada '834 to include a polarizer having an optical axis interposed between said transparent plate and said projection unit, said transparent plate being made of a drawing resin and having an optical axis, and the optical axis of said transparent plate substantially aligns with the optical axis of said polarizer as taught by Yamada '834.

The ordinarily skilled artisan would have been motivated to modify Omae '454 per the above for the purpose of providing a projection apparatus.

Claim 8:

Omae '454 discloses the elements of claims 4 and 7 as noted above.

Omae '454 fails to disclose said polarizer comprising a polarizing layer and a pair of substrates that sandwich said polarizing layer and are made of a substrate material, and said transparent plate being made of the substrate material used in making said substrates.

Yamada '834 discloses said polarizer comprising a polarizing layer and a pair of substrates that sandwich said polarizing layer and are made of a substrate material, and said transparent plate being made of the substrate material used in making said substrates [Fig 6, 8 and Fig 6, 6 and Fig 6, 2]

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Omae '454 to include said polarizer comprising a polarizing layer and a pair of substrates that sandwich said polarizing layer and are made of a substrate material, and said transparent plate being made of the substrate material used in making said substrates as taught by Yamada '834.

The ordinarily skilled artisan would have been motivated to modify Omae '454 per the above for the purpose of supporting the polarizing layer adjacent to the liquid crystal.

Claim 9:

Omae '454 discloses the elements of claims 4 and 7 as noted above.

Omae '454 fails to disclose a polarizer bonded to said transparent plate.

Yamada '834 discloses a polarizer bonded to said transparent plate [Fig 5, 8]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Omae '454 to include a polarizer bonded to said transparent plate as taught by Yamada '834.

The ordinarily skilled artisan would have been motivated to modify Omae '454 per the above for the purpose of providing polarized light energy to the modulator.²

Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omae '454 in view of US Pat No 3,910,682 issued to Arai et al (hereafter Arai '682).

Claim 3:

Omae '454 discloses the elements of claim 1 as noted above.

² Refer Pub No US 2003/0147137 issued to Li, paragraphs 3 and 4

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Omae '454 fails to disclose said transparent plate having a surface and the surface of said transparent plate being coated with a surface active agent, or treated for electrostatic protection.

Arai '682 discloses said transparent plate having a surface and the surface of said transparent plate being coated with a surface active agent, or treated for electrostatic protection [Fig 2, 2]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Omae '454 to include said transparent plate having a surface and the surface of said transparent plate being coated with a surface active agent, or treated for electrostatic protection as taught Arai '682.

The ordinarily skilled artisan would have been motivated to modify Omae '454 per the above for the purpose of omitting the washing step [col 2, lines 45-55].

Claim 10:

Omae '454 discloses the elements of claim 4 as noted above.

Omae '454 fails to disclose said transparent plate having a surface and the surface of said transparent plate being coated with a surface active agent, or treated for electrostatic protection.

Arai '682 discloses said transparent plate having a surface and the surface of said transparent plate being coated with a surface active agent, or treated for electrostatic protection [Fig 2, 2]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Omae '454 to include said transparent plate having a surface and the surface of said transparent plate being coated with a surface active agent, or treated for electrostatic protection as taught Arai '682.

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The ordinarily skilled artisan would have been motivated to modify Omae '454 per the above for the purpose of omitting the washing step [col 2, lines 45-55].

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Omae '454 in view of US Pat No 5,865,521 issued to Hashizume et al (hereafter Hashizume '521).

Claim 5:

Omae '454 discloses the elements of claim 4 as noted above.

Omae '454 fails to disclose an antireflection film formed on at least one surface of said transparent plate.

Hashizume '521 discloses an antireflection film formed on at least one surface of said transparent plate [Fig 12, 632].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Omae '454 to include an antireflection film formed on at least one surface of said transparent plate as taught by Hashizume '521.

The ordinarily skilled artisan would have been motivated to modify Omae '454 per the above for the purpose of eliminating reflections from the substrate in order to provide an efficient reflection-type liquid crystal device [col 21, lines 10-55].

Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omae '454 in view of US Pat No 5,868,485 issued to Fujimori et al (hereafter Fujimori '485).

Claim 11:

Omae '454 discloses the elements of claim 4 as noted above.

Omae '454 fails to disclose a color synthesizing prism, a mounting frame plate composed of a first frame member and a second frame member that sandwich said optical modulation device a fixed frame plate in a fixed contact with a light incident surface of said color synthesizing prism; and an intermediate frame plate sandwiched between said mounting frame plate and said fixed frame plate.

Fujimori '485 discloses a color synthesizing prism, a mounting frame plate composed of a first frame member and a second frame member that sandwich said optical modulation device a fixed frame plate in a fixed contact with a light incident surface of said color synthesizing prism; and an intermediate frame plate sandwiched between said mounting frame plate and said fixed frame plate [Fig 5, 22 and Fig 5, 52 and Fig 5, 55 and Fig 5, 40R and Fig 5, 54 and Fig 5, 53]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Omae '454 to include a mounting frame plate composed of a first frame member and a second frame member that sandwich said optical modulation device a fixed frame plate in a fixed contact with a light incident surface of said color synthesizing prism; and an intermediate frame plate sandwiched between said mounting frame plate and said fixed frame plate as taught by Fujimori '485.

The ordinarily skilled artisan would have been motivated to modify Omae '454 per the above for the purpose of mounting the liquid crystal panel unit [Fig 5].

Claim 12:

Omae '454 discloses the elements of claims 4 and 11 as noted above.

Omae '454 fails to disclose said mounting frame plate being made of a resin containing glass fiber.

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Fujimori '485 discloses said mounting frame plate being made of a resin containing glass fiber [col 10, line 15].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Omae '454 to include said mounting frame plate being made of a resin containing glass fiber as taught by Fujimori '485.

The ordinarily skilled artisan would have been motivated to modify Omae '485 per the above for the purpose of using a mounting plate which can be easily manufactured.

Claim 13:

Omae '454 discloses the elements of claims 4 and 11 as noted above.

Omae '454 fails to disclose said mounting frame plate being made of metal.

Fujimori '485 discloses said mounting frame plate being made of metal [col 10, lines 40-48].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Omae '454 to include said mounting frame plate being made of metal as taught by Fujimori '485.

The ordinarily skilled artisan would have been motivated to modify Omae '454 per the above for the purpose of using a mounting plate that can withstand heat.

Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No 6,007,205 issued to Fujimori (hereafter Fujimori '205) in view of Yamada '834.

Claim 14:

Fujimori '205 discloses:

- a light source [Fig 7,8]
- a plurality of optical modulation devices that modulate a light flux emitted from the light source according to image information [Fig 12, 925R, 925G, 925B];
- a prism that synthesizes the light flux modulated by said plurality of optical modulation devices [Fig 11, 910];
- a projection unit that magnifies and projects the light flux synthesized by said prism [Fig 8, 6]
- a partition that surrounds said plurality of optical modulation devices and said prism via an air layer and thereby separates said plurality of optical modulation devices said prism from said light source and said projection unit [Fig 12, 1500],
- a light outgoing window that emits the light flux modulated by said at least one optical modulation device therefrom. [Fig 8]

Fujimori '205 discloses the elements as noted above.

Fujimori '205 fails to disclose a transparent plate fitted in a light incident window corresponding to a light incident surface of at least one optical modulation device.

Yamada '834 discloses a transparent plate fitted in a light incident window corresponding to a light incident surface of at least one optical modulation device

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Fujimori '205 to include a transparent plate fitted in a light incident window corresponding to a light incident surface of at least one optical modulation device as taught by Yamada '834.

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The ordinarily skilled artisan would have been motivated to modify Fujimori '205 per the above for the purpose of reducing the adverse affect of foreign matter on the image quality [col 4, lines 20-24].

Claim 15:

Fujimori '205 discloses a fan that circulates air located inside said partition [Fig 9, 15B].

Claim 16:

Fujimori '205 discloses the elements of claim 14 as noted above.

Fujimori '205 fails to disclose a polarizer bonded to said transparent plate.

Yamada '834 discloses a polarizer bonded to said transparent plate [Fig 5, 8 and Fig 5, 6]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Fujimori '205 to include a polarizer bonded to said transparent plate as taught by Yamada '834.

The ordinarily skilled artisan would have been motivated to modify Fujimori '205 per the above for the purpose of reducing the adverse effect of foreign matter o the image quality [col 4, lines 20-24]

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Fujimori '205 and Yamada '834 and further in view of Arai '682.

Claim 17:

The combination of Fujimori '205 and Yamada '834 discloses the elements of claim 14 as noted above.

The combination of Fujimori '205 and Yamada '834 fails to disclose said transparent plate having a surface and the surface of said transparent plate being coated with a surface active agent, or treated for electrostatic protection.

Arai '682 discloses said transparent plate having a surface and the surface of said transparent plate being coated with a surface active agent, or treated for electrostatic protection [Fig 2, 2]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Fujimori '205 and Yamada '834 to include said transparent plate having a surface and the surface of said transparent plate being coated with a surface active agent, or treated for electrostatic protection as taught Arai '682.

The ordinarily skilled artisan would have been motivated to modify the combination of Fujimori '205 and Yamada '834 for the purpose of omitting the washing step [col 2, lines 45-55].

Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada '834 in view of Fujimori '205.

Claim 18:

Yamada '834 discloses:

- a light source [Fig 2, 208];
- an optical modulation device that modulates a light flux emitted from the light source according to image information [Fig 2 and Fig 7 and Fig 5,1 and col 1, lines 33-46 and col 1, lines 60-67];

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- a transparent plate bonded to a light emitting surface of said optical modulation device, the transparent plate bonded to, and in contact with, substantially the entire light emitting surface of said optical modulation device [Fig 4, 8];

Yamada '834 discloses the elements as noted above.

Yamada '834 fails to disclose a power supply unit; an interface circuit; a control circuit that controls the optical modulation device; and an outer casing that accommodates the light source, the optical modulation device, the transparent plate, the power supply unit, the interface circuit, and the control circuit.

Fujimori '205 discloses a power supply unit [Fig 2, 7]; an interface circuit [Fig 2, 11]; a control circuit [Fig 2, 12] that controls the optical modulation device; and an outer casing [Fig 1A, 2] that accommodates the light source, the optical modulation device, the transparent plate, the power supply unit, the interface circuit, and the control circuit.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yamada '834 to include a power supply unit; an interface circuit; a control circuit that controls the optical modulation device; and an outer casing that accommodates the light source, the optical modulation device, the transparent plate, the power supply unit, the interface circuit, and the control circuit as taught by Fujimori '205.

The ordinarily skilled artisan would have been motivated to modify Yamada '834 per the above for the purpose of providing a projection display apparatus.

Claim 19:

Yamada '834 discloses:

- a light source [Fig 2, 208];

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- an optical modulation device that modulates a light flux emitted from the light source according to image information [Fig 2 and Fig 7 and Fig 5,1 and col 1, lines 33-46 and col 1, lines 60-67];
- a projection unit that magnifies and projects the light flux modulated by said optical modulation device [Fig 2, 209]

Yamada '834 discloses the elements as noted above.

Yamada '834 fails to disclose a partition that surrounds said optical modulation device via an air layer and thereby separates said optical modulation device from said light source and said projection unit, said partition having a transparent plate fitted in a light incident window corresponding to a light incident surface of said optical modulation device, and a light outgoing window that emits light flux modulated by said optical modulation device therefrom; a power supply unit; an interface circuit; a control circuit that controls the optical modulation device; and an outer casing that accommodates the light source, the optical modulation device, the partition, the power supply unit, the interface circuit, and the control circuit.

Fujimori '205 discloses a partition [Fig 12, 1500] that surrounds said optical modulation device via an air layer and thereby separates said optical modulation device from said light source and said projection unit; said partition having a transparent plate fitted in a light incident window corresponding to a light incident surface of said optical modulation device, and a light outgoing window that emits light flux modulated by said optical modulation device therefrom; a power supply unit [Fig 2, 7]; an interface circuit [Fig 2, 11]; a control circuit [Fig 2, 12] that controls the optical modulation device; and an outer casing [Fig 1A, 2] that accommodates the

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light source, the optical modulation device, the partition, the power supply unit, the interface circuit, and the control circuit

Response to Arguments

Applicant's arguments filed 12/12/2003, have been fully considered but they are not persuasive.

First Applicant Argument :

Applicant states on page 8 "Yamada in Fig 2, and at col 1, lines 47-63, discloses polarizing plates 206 and 207 attached to outer surfaces of substrates 202, 203 of the liquid crystal cell 201. The device disclosed in Fig 2 of Yamada fails to disclose, teach or suggest any transparent plate.

First Applicant Response:

Examiner is not persuaded. Examiner maintains polarizing plates 206 and 207 in Fig. 2 of Yamada are in fact transparent plates and thus do read on the claim limitation. To support examiner's allegation that Yamada's polarizing plates 206 and 207 do read on the claimed "transparent plates" examiner provides the teaching of US Pat No 4,160,584 issued to Giles.

Giles discloses in col 1, lines 30-43 the following:

OBJECT OF THE INVENTION

It is accordingly a primary object of the present invention to provide a pair of spectacles comprising lenses retained by rims which are connected by a bridge member, the spectacle lenses comprising a transparent stratum, a transparent metallic layer and a transparent layer of dielectric material overcoated on said transparent metallic layer.

A further object of the present invention is to provide a light polarizing sunglass spectacle wherein the transparent substrate described above is a light polarizing element which preferably comprises a synthetic plastic material.

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Furthermore, Giles discloses in column 2, lines 18-21 the following:

Referring to the FIGURE of the drawing, a transparent substrate 1, which is preferably a synthetic plastic material, and most preferably a synthetic plastic material, and most preferably a synthetic plastic light polarizing element.

Examiner maintains that the polarizing plates 206 and 207 disclosed by Yamada do in fact read on the claim 1 limitation “a transparent plate bonded to, and in contact with, substantially the entire at least one surface of the optical modulation device.”

Second Applicant Argument:

Applicant states in the second paragraph on page 8 “In fact, the device in Fig 2 of Yamada has deficiencies/disadvantages, i.e., poor quality due to dust attached to polarizing plates, which the invention set forth in claims 1 and 4 aims to prevent or reduce.”

Second Examiner Response:

Examiner is not persuaded. In response to Applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., poor quality due to dust attached to polarizing plates) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Third Applicant Argument:

Applicant states in the fourth paragraph on page 8, “First, unlike the Office Action's assertion, the liquid crystal layer 13 disclosed in Omae is not an optical modulation device, because the entire device in Fig. 1 is disclosed by Omae as a liquid crystal panel. Liquid crystal layer 13 is just a polymer dispersion liquid that is inserted in a gap between substrates 11 and

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12. (See Omae, at col. 8, lines 13-37.) That is, the entire liquid crystal panel of Omae might be considered to be an "optical modulation device", but the layer 13 alone is not art "optical modulation device."

Third Examiner Response:

Examiner is not persuaded. Examiner maintains that the layer 13 disclosed by Omae is in fact an optical modulator. Examiner provides the following disclosure by Omae which reads on the claimed "optical modulation device."

Detailed Description Text (21):

It is to be noted that the best average particle diameter or average hole diameter for the polymer dispersion liquid crystals will vary according to the wavelength of the light to be modulated by the liquid crystal panel, but good contrast can be achieved if these values are in the range 1.5-2.0 μm for red light, 1.3-1.7 μm for green light, and 1.0-1.5 μm for blue light.

Detailed Description Text (71):

It is to be noted that the dichroic mirrors used in the color separation and synthesizing optics above can be simple color filters. It is also possible to eliminate the color synthesis optics and provide a separate projection lens for each of the red, green, and blue modulation systems as shown in FIG. 24. The liquid crystal projection television comprises a light source 201, a filter 202, dichroic mirrors 203a and 203b, flat mirror 203c, liquid crystal panels 204a, 204b and 204c, focusing lenses 205a, 205b and 205c, projection pupils 206a, 206b and 206c and projection lenses 207a, 207b and 207c. In this case, separate red, green, and blue images are projected by the respective projection lenses, and the images are merged on screen to create a composite color image.

Detailed Description Text (78):

The operation of this embodiment is described below. The red, green, and blue modulating systems are described below with reference to the blue modulating system. First, white light is emitted from the light source 222, reflected by the mirror 225, and then color separated by the dichroic mirrors. The blue component of the white light is reflected by the blue dichroic mirror 224b, and is incident to the corresponding liquid crystal panel 221b. This liquid crystal panel 221b is a reflection-type liquid crystal panel as shown in FIG. 18. The scattering state of incident light is controlled by the signal applied to the pixel electrodes 147 to modulate the light. Light reflected by the scattered state of the liquid crystal panel 221b is blocked by the mirror 225 placed in the pupil of the projection optics 229, and light reflected in the transparent state passes through the pupil of the projection optics 229. The passed light is then enlarged and projected to the screen 228 by the projection optics 229.

Detailed Description Text (79):

This same basic operation applies to red and green light. It should be noted, however, that the green dichroic mirror 224a and blue dichroic mirror 224b provided for color separation of the

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white light recombine the light modulated by the liquid crystal panel into a single image for projection by the projection lens.

CLAIMS:

3. The liquid crystal panel according to claim 1 further comprising:

color filters for the three primary colors, red, green and blue, for each pixel on one of said first and second substrates; and wherein the ultraviolet reduction rate of said ultraviolet reducing means formed over pixels for modulating red light is lower than that of said ultraviolet reducing means formed over the other pixels.

7. A liquid crystal projection display apparatus comprising:

a light source;

a liquid crystal panel for light-modulating an incident light emitted by said light source in accordance with an image to be displayed, which comprises;

a first substrate on which pixel electrodes are provided in a matrix pattern;

a second substrate on which a transparent electrode is provided;

an ultraviolet reducing means formed on one of said first and second substrates in a pattern substantially corresponding to said matrix pattern of said pixel electrodes, said ultraviolet reducing means being formed from alternating layers of a high refractive index dielectric thin film and a low refractive index dielectric thin film, and said ultraviolet reducing mean having a transmittance of 30% to 70%;

a polymer dispersion liquid crystal sandwiched between said first and second substrates for forming optical images as changes in the state of light scattering by said liquid crystal layer; and a projection means for projecting light modulated by said liquid crystal panel.

9. A liquid crystal projection display apparatus comprising:

a light source;

a color separation means for separating the light emitted from said light source into red, green, and blue wavelength lights;

three liquid crystal panels each having an ultraviolet reducing means which are arranged corresponding to said red, green and blue wavelength lights, respectively; and

a projection means for projecting lights modulated by said three liquid crystal panels;

wherein the ultraviolet reduction rate of said ultraviolet reducing means of at least one of said liquid crystal panels is different from the ultraviolet reduction rate of the ultraviolet reducing means of the other liquid crystal panels.

11. A liquid crystal projection display apparatus comprising:

a light source;

a liquid crystal panel for light-modulating an incident light emitted by said light source in accordance with an image to be displayed, which comprises;

a liquid crystal panel member having a first substrate on which pixel electrodes are arranged in a matrix pattern;

a second substrate on which a transparent counter electrode is formed;

an ultraviolet reducing means formed on one of said first and second substrates in a pattern substantially corresponding to said matrix pattern of said pixel electrodes;

a polymer dispersion liquid crystal layer sandwiched between said first and second substrates for forming optical images as changes in the state of light scattering by said liquid crystal layer;

a projection means for projecting light modulated by said liquid crystal panel;

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a transparent plate arranged on at least one of light incident and emission sides of said liquid crystal panel member;
wherein said liquid crystal panel member and said transparent plate are optically coupled by a transparent bonding agent; and
said transparent plate satisfies the following equation ##EQU6## where t is the center thickness from the air-contact surface of said transparent plate to the liquid crystal layer, n is the refractive index, and d is the maximum diameter of the effective display area of the liquid crystal panel.

13. A liquid crystal projection display apparatus comprising:
a light source;
a color separation means for separating the light emitted from said light source into red, green, and blue wavelength light;
liquid crystal panels each having an ultraviolet reducing means which are arranged corresponding to said red, green and blue wavelength lights respectively; and
a projection means for projecting lights modulated by said liquid crystal panels;
wherein the ultraviolet reduction rate of said ultraviolet reducing means of at least one of said liquid crystal panels is different from the ultraviolet reduction rate of the ultraviolet reducing means of the other liquid crystal panels.

Fourth Applicant Argument:

Applicant states in the fifth paragraph on page 8 "Second, unlike the Office Action's assertion, neither the transparent substrate 11 (in Fig. 1) nor the transparent plate 153 (in Fig. 22) is "bonded to, and in contact with", the liquid crystal layer 13, or the liquid crystal panel 152, respectively. Instead, as shown in Fig. 1, Omae discloses a counter electrode 16 positioned between the transparent substrate 11 and layer 13. While electrode 16 may be in contact with (but not bonded to) the liquid crystal layer 13, the transparent substrate 11 is not "bonded to, and in contact with" the layer 13. Further, as shown in Fig. 22, and at col. 17, lines 11-21, Omae discloses that "the transparent plate 153 is connected to the emission side of the liquid crystal panel 152 with the transparent body 154 therebetween."

Fourth Examiner Response:

Examiner is not persuaded. Examiner maintains, in order to minimize arguments regarding Fig 22, Applicant is referred to Omae's teaching in Fig 23. The following disclosure by Omae, column 20, lines 16-26, reproduced below is pertinent to Fig 23:

Because the transparent plates 190a, 190b, and 190c, and 191a, 191b, and 191c suppressing extraneous light on the incidence and emission sides of the liquid crystal panels 152a, 152b, and 152c are coupled, loss of contrast due to this extraneous light can be suppressed. Note, however, that it is also possible to eliminate these transparent plates and use only the liquid crystal panels 152a, 152b, and 152c as shown in FIG. 21. In addition, because three liquid crystal panels 152a, 152b, and 152c are used for red, green, and blue, respectively, a projected image with good resolution and brightness can be obtained.

Examiner maintains Fig 23 and above disclosure clearly reads on the claim 1 limitation "a transparent plate bonded to, and in contact with, substantially the entire at least one surface of the optical modulation device."

Fifth Applicant Argument:

Applicant states in the third paragraph on page 9 "Regarding the rejection of claims 2, 3 and 5-13 under 35 U.S.C. §103(a), neither Yamada, nor Hashizume, Aral or Fujimori 485, provide the deficiencies in Omae discussed above with respect to claims 1 and 4. Thus, Applicants submit that claims 2, 3 and 5-13, which depend from independent claims 1 and 4, respectively, are likewise patentable over the applied art for at least the reasons discussed above. Withdrawal of the rejection of claims 2, 3 and 5-13 under 35 U.S.C. § 103(a) is respectfully requested.

Fifth Examiner Response:

Applicant is referred to above Third and Fourth Examiner Responses.

Sixth Applicant Argument:

Applicant states in the fourth paragraph on page 9, "Regarding the rejection of independent claims 18 and 19 under 35 U.S.C. § 103(a), the combination of Yamada and Fujimori 205 does not teach or suggest a projector having a transparent plate bonded to, and in contact with, substantially the entire length of a light emitting surface of a optical modulation device, as set forth in claim 18."

Sixth Examiner Response:

Examiner is not persuaded. Applicant is referred to supra First Examiner Response.

Seventh Applicant Argument:

Applicant states in the fourth paragraph on page 9, "Further, the combination of Yamada and Fujimori 205 does not teach or suggest a projector comprising, inter alia, a partition having a transparent plate fitted in a light incident window corresponding to a light incident surface of an optical modulation device, and a light outgoing window that emits the light flux modulated by the optical modulation device, as set forth in amended claim 19."

Seventh Examiner Response:

Examiner is not persuaded. Applicant is referred to the second embodiment of Fujimori 205 col 15, lines 3-35 which describes Figs 11-14. Figs 11-14 discloses: a transparent plate [polarizing plate 983], a light incident window [opening 1503 in dustproof box 1500], an optical modulation device [925B], an outgoing window [polarizing plate 981 in opening 1501 in dustproof box 1500].

Eighth Applicant Argument:

Applicant states in the first paragraph on page 10, "As discussed above, Yamada, in Fig. 2 and at col. 1, lines 47-63, discloses polarizing plated 206 and 207 attached to the outer surfaces

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of substrates 202, 20') of the liquid crystal cell 201. Similarly, Fig. 4 of Yamada discloses polarizing plates 8 attached to substrates 2, 3 of cell 1. The devices disclosed in Figs. 2 and 4 of Yamada fail to disclose, teach or suggest any transparent plate. Further, in Yamada, as shown in Figs. 5 and 6, each of the transparent cover members 6 and 7 is attached only at the top and bottom of the one surface of the liquid crystal cell 1. Further, neither Fujimori 205 nor Yamada provide any motivation to modify their structure to achieve the claimed invention."

Eighth Examiner Response:

Examiner is not persuaded. Examiner maintains the polarizing plates disclosed by Yamada reads on the claimed "transparent plates." Examiner provides the following disclosure by Giles (US Pat No. 4,160,584).

Referring to the FIGURE of the drawing, a transparent substrate 1, which is preferably a synthetic plastic material, and most preferably a synthetic plastic light polarizing element, has vacuum deposited thereover layer 2, which is a transparent metallic layer which may comprise, for example, silver, chromium, stainless steel, nickel, nichrome, etc., and essentially may comprise any reflective metallic substance which is coated in a thickness sufficiently thin so that it will be transparent to a wearer of a lens so constructed. Dielectric material layer 3 is applied by vacuum deposition in a thickness which is an odd multiple of one-quarter wavelength with respect to a reference color of the spectrum. Through about 5 orders an intensely colored reflection will be evident to a viewer. Over five orders the chromatic affect diminishes because the reflected bond widths become too narrow to be perceptible to the eye.

Furthermore, Applicant is referred to Yamada's disclosure in Fig 2 which shows the transparent plate (polarizing plate 206) "bonded to, and in contact with, substantially the entire at least one surface of the optical modulation device."

Furthermore, In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some

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teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to place the liquid crystal cell 201 in an enclosure to provide protection from the environment.

Ninth Applicant Argument:

Applicant states in the second paragraph on page 10, "Regarding claims 14-17, Fujimori 205 in combination with Yamada does not teach or suggest a "partition having a transparent plate fitted in a light incident window corresponding to a light incident surface of at least one optical modulation device", as recited in independent claim 14.

Ninth Examiner Response:

Examiner is not persuaded. Applicant is referred to supra Eighth Examiner Response.

Tenth Applicant Argument:

Applicant states on page 10, "The Office Action, at page 20, in responding to Applicants' arguments raised in the July 14, 2003 Amendment After Final Rejection, seems to imply that the above feature is not recited independent claim 14. Applicants direct the Examiner's attention to claim 14 which unambiguously recites a "partition having a transparent plate fitted in a light incident window corresponding to a light incident surface of at least one optical modulation device".

Tenth Examiner Response:

Examiner is not persuaded. Applicant is referred to supra Eighth Examiner Response.

Eleventh Applicant Argument:

Applicant states in the first paragraph on page 11 "The Office Action, at page 12, admits that Fujimori 205 does not teach or suggest a transparent plate fitted in a light incident window. However, the Office Action attempts to make up for the shortcomings of Fujimori 205 by asserting that Yamada makes up for this deficiency. The assertion is respectfully, traversed. Yamada, as disclosed at col. 3, line 58 to col. 4, line 39, and shown in Figs. 5 and 6, is directed to a liquid crystal cell that may be used in a active matrix LCD device. Figs. 5 and 6 simply illustrate a schematic cross-sectional view of the liquid crystal cell 1. Contrary to the Office Action's assertion, nowhere in Yamada there is taught or suggested a transparent plate fitted in a light incident window, as recited in independent claim 14."

Eleventh Examiner Response:

Examiner is not persuaded. Applicant is referred to supra Eighth Examiner Response. Furthermore, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Twelfth Applicant Argument:

Applicant states in the third paragraph on page 11 "Contrary to well settled case law, the Office Action is now engaging in impermissible hindsight reconstruction of the invention set forth in claim 14 using Applicants' claim structure as a template and selecting elements from references to fill the page. There is nothing in either Fujimori 205 or Yamada to teach or suggest the recited feature a "partition having a transparent plate fitted in a light incident window

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corresponding to a light incident surface of at least one optical modulation device", as recited in independent claim 14."

Twelfth Examiner Response:

Examiner is not persuaded. Applicant is referred to supra Seventh Examiner Response.

Twelfth Examiner Response:

Applicant states in the fourth paragraph on page 11, "For at least the reasons discussed above, Applicants submit that claim 14 is patentable over the applied art. Claims 15-17, which depend from claim 14, are likewise patentable over the applied art for at least the reasons discussed above. Withdrawal of the rejection of claims 14-17 under 35 U.S.C. § 103(a) is respectfully requested. In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-19 are earnestly solicited."

Twelfth Examiner Response:

Examiner is not persuaded. Examiner is perplexed by Applicant's arguments because the elements argued by Applicant are clearly identified in supra Office Action. Rule 37 CFR 1.111(b) requires Applicant to "distinctly and specifically point out errors" in the examiner's action. Also, arguments or conclusions of Applicant cannot take the place of evidence. *In re Cole*, 51 CCPA 919, 326F.2d 769, 140 USPQ 230 (1964).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne LeRoux whose telephone number is (703) 305-0620. The examiner can normally be reached on Monday – Friday from 8:00 AM to 4:30 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached on (703) 308-1436.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Patent related correspondence can be forwarded via the following FAX number (703) 872-9306

Etienne LeRoux

3/15/2004



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